#### REDACTED - FOR PUBLIC INSPECTION



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February 27, 2015

Via ECFS

Marlene H. Dortch, Secretary Federal Communications Commission 445 12<sup>th</sup> Street, SW, Room TW-5-A325

Re: Special Access Data Collection, WC Docket No. 05-25; RM-10593

Dear Secretary Dortch,

Zayo Group LLC ("Zayo"), FRN 0016555849, enclosed for filing, in accordance with the Order and Data Collection Protective Order<sup>1</sup>, are the non-confidential and the redacted version of Zayo's Confidential responses to essay questions as part of the special access mandatory data collection. The Confidential and Highly Confidential versions of the essay responses and the Highly Confidential data container have been submitted via the Commission's Special Access Web Portal.

In accordance with the Data Collection Protective Order, all pages of this filing are marked "REDACTED – FOR PUBLIC INSPECTION".

Any questions relating to the enclosed materials should be directed to the undersigned.

Sincerely,

/s/ Laura Littman

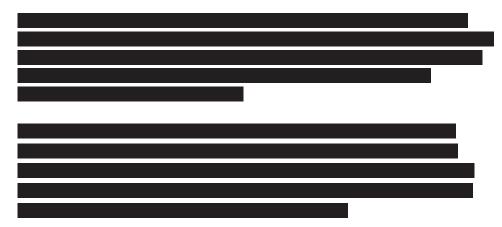
Laura Littman Corporate Counsel

<sup>&</sup>lt;sup>1</sup> In the Matter of Special Access Rates for Price Cap Local Exchange Carriers, WC Docket No. 05-25; AT&T Corp. Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services, RM-10593, Order and Data Collection Protective Order, Appendix A, para 3, DA 14-1424, (rel. Oct. 1, 2014).

#### **EXPLANATORY ATTACHMENT**

# HIGHLY CONFIDENTIAL INFORMATION SUBJECT TO THE PROTECTIVE ORDER IN DOCKET NO. 05-25 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION

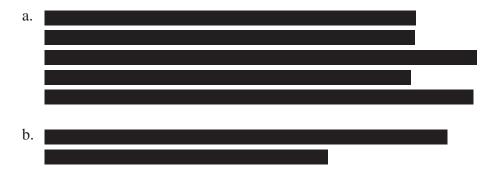
II.A.9: In the early years of Zayo's eight-year history, Zayo had various headquarter locations in Louisville, Colorado, with the Louisville location listed being the most established location.



## **QUESTION II.A.5**

Please see Zayo's publically available interactive map that has the capability of showing several levels of detail, including fiber connections to locations and nodes (available at http://www.zayo.com/network/file-downloads). Zayo does not have a map showing the year that each Node went live.

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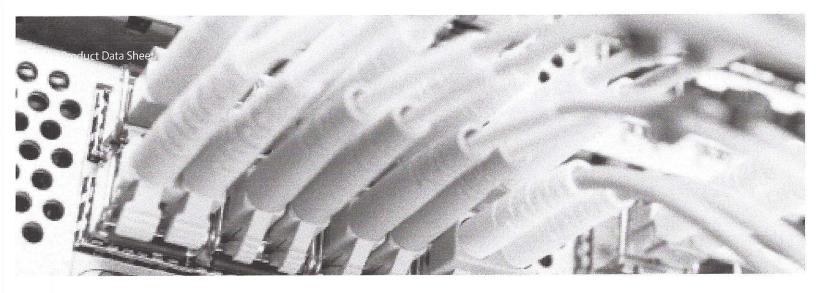
c. See Zayo's publically available financials, which provide extensive detail related to Zayo's products and services. Further, Zayo considers the following markets as its top-served markets in the US (not in ranked order):



# HIGHLY CONFIDENTIAL INFORMATION SUBJECT TO THE PROTECTIVE ORDER IN DOCKET NO. 05-25 BEFORE THE FEDERAL COMMUNICATIONS COMMISSION



marketing materials.



# SONET

Dedicated Bandwidth for Secure Transport

## Why SONET?

SONET service provides a reliable and dedicated connection for data, video and voice. Zayo's network offers strong diversity options and routes that are unique from most carrier and ILEC networks. Zayo has flexible contract terms and options for service portability, either within metro markets or across the U.S.

## The Advantage of a Dedicated Ring

Connect sites in a dedicated ring configuration to eliminate all single points of failure. In the event of a fiber cut, traffic is re-routed almost instantly, reducing the risk of network outage. Enjoy the benefit of creating a custom dedicated network with full physical diversity and security.

#### Service Overview

- · Dedicated and protected connection over SONET architecture
- Bandwidth from DS3-OC192 on deep metro and intercity routes
- · Thousands of locations on-net, including many PoPs and data centers
- · Point-to-point, hub-and-spoke, and dedicated ring configurations
- Support for bandwidth aggregation, multiple protocols, and concatenated or channelized configurations

### Reliability

- Sub-50 ms failover
- 99.999% guaranteed by SLA
- Choice to specify A-Z path to support diversity, even when procuring fiber routes from multiple carriers

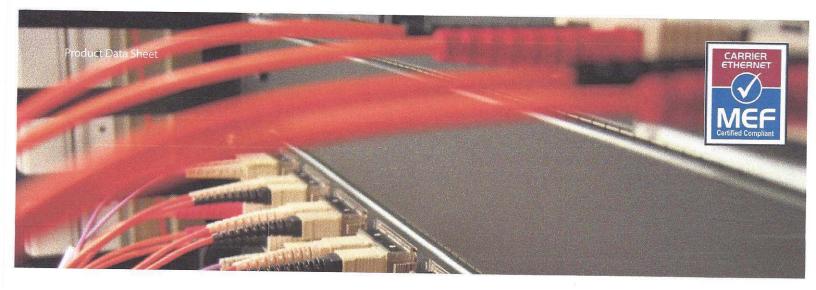
## Commercial Flexibility

- · Option for service portability
- Automated Access Service Request (ASR) handling industry-leading on-net delivery intervals

To learn how Zayo can help your organization, please call 866.364.8033 or visit www.zayo.com

Zayo Group is a global provider of bandwidth infrastructure services, including dark fiber, wavelengths, SONET, Ethernet, IP services, and carrier-neutral colocation and interconnection. Zayo was founded in 2007 and is headquartered in Boulder, Colorado, with European headquarters in London and Paris. Visit us at www.zayo.com.





Standard Protocal on Scalable Transport

## Why Ethernet?

Whether you need to seamlessly support a large number of users, connect offices together, or access the Internet quickly and reliably, Zayo's Ethernet service offers exceptional performance and consistency to power your organization.

Zayo's carrier-class Ethernet is available with bandwidth from 100 Mbps to 10 Gbps, and with options for QoS and route protection. Ethernet operates on a standard protocol and supports almost any application, which streamlines network management. Ethernet's various topologies can be used together to link LANs from across metro and intercity locations. Ethernet is particularly suited for organizations with quickly growing bandwidth needs, a broad array of potential applications, and multiple on-net locations.

#### Ethernet Product Portfolio

- E-Line: Point-to-Point and Point-to-Multipoint configurations
- E-LAN: Multipoint-to-Multipoint configuration
- Ethernet Private Dedicated Network (E-PDN): Completely private, fully managed service with dedicated fiber and equipment

## High-Bandwidth Connectivity

- Bandwidth options from 100 Mbps to 10 Gbps
- Private, dedicated and shared/switched solutions
- · Deep metro fiber and extensive intercity fiber
- · Financial strength to support fiber network extension
- · Remote hands for on-site assistance
- · SLAs and geographically diverse NCCs

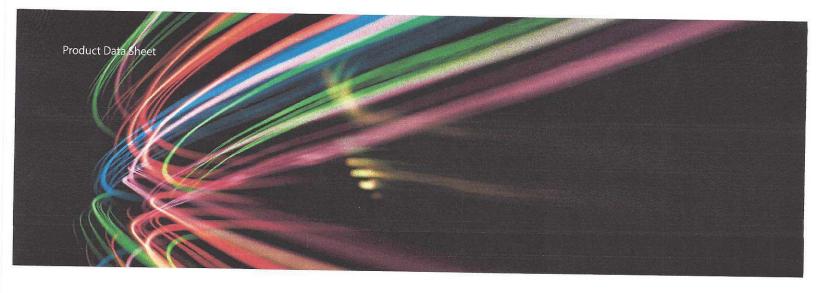
# Flexibility on a Standard Protocol

- Delivered with fiber directly to your place of business
- Add locations and scale bandwidth quickly and over the same interface
- Support multiple services from one interface VoIP, video and more

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# **Wavelengths (DWDM)**

Dedicated Layer 1 Lit Service

# Why Wavelengths?

DWDM service links bandwidth-intensive sites on metro and intercity routes. For large bandwidth consumers, predictable latency and reduced capex.

#### Service Overview

- 1G, 2.5G, 10G, or 100G and exclusive low-latency routes
- Strong connectivity between Tier 1-5 markets in US
- Extensive connectivity throughout the UK
- Metro DWDM throughout Paris
- Data center connectivity in Frankfurt, Amsterdam, and Dublin
- Continue to target major traffic aggregation sites for CAPEX investments
- LAN PHY and WAN PHY options available
- · Specify protocols and security measures
- Diversity and sub-50 ms protection switching available
- Option to specify A-Z path, supporting diversity even with routes procured from a different carrier
- · Flexible network topologies
- Choice of single or multiple waves
- · Bandwidth up to 100G major routes already operational
- Geographically diverse NCCs and SLA guarantees

### Low-Latency Routes

Zayo's low-latency routes provide financial, carrier and enterprise customers the advantage of rapid service between core locations. Zayo has invested in new routes and optronics to eliminate local stops, reduce the distance between essential markets, and minimize regens.

### Private Network Offering

If your organization needs the security and dependability of a private network but do not want the responsibility of owning and operating your own network infrastructure, then Zayo's private wavelength option might suit your organization. This service offers wavelength connectivity on dedicated fiber and optical equipment, allowing you to securely connect high-bandwidth facilities within a metro or between cities.

# **Extending our Reach**

Zayo has grown its wavelengths network through both organic growth and acquisitions. We continually invest in our network, expanding connectivity options at a rapid pace.

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# E-Line Service Overview-continued

#### **E-Line Service Overview**

E-Line is a carrier-grade Layer-2 point-to-point transport service where Ethernet packets are delivered over optical fiber making it possible to meet bandwidth demands with a cost effective, scalable alternative to legacy connectivity solutions such as TDM, SONET, ATM and Frame Relay networks. It is an end-to-end Ethernet network service where businesses attach their LAN to a User-Network Interface (UNI) using a standard copper or fiber Ethernet interface to access the Zayo network. An Ethernet Virtual Connection (EVC) is used to connect UNIs to enable the transfer of Ethernet service frames between them.

**BENEFITS:** 

- Flexible bandwidth ranging from 100Mbps to 10Gbps
- Simple Ethernet WAN solution to seamlessly interconnect two remote locations together
- No protocol conversion required ensuring interoperability between your LAN and wide area network
- Point-to-point, point-to-multipoint configurations allowing you to build a tailor-made high-speed network
- Delivered directly to your terminating equipment via copper or fiber interfaces
- Prioritize traffic via Class of Service assignments
- SLAs supported by 24/7/365 NOC

A choice of E-Line topologies is available to meet business networking needs. A point-to-point connection when there are only two locations involved or a point-to-multipoint (one-to-many) service providing connectivity between a hub location and multiple sites (hub-and-spoke). A one-to-many configuration can be used to connect a central site to branch offices, allowing each branch to exchange traffic with the main site. E-Line service can also be used to provide a private Ethernet transport between a business location and a Zayo POP or other Data Center for cross-connecting to cloud service providers.

#### How Ethernet E-Line Works

E-Line is a fully managed Layer-2 Ethernet service connecting LANs within the same metropolitan area using an optical fiber transport. It is also possible to connect office LANs located in different metropolitan areas over Zayo's Intercity transport. Flexible bandwidth options are available.

Point-to-point and point-to-multipoint (hub-and-spoke) data transport configurations are supported. Physical and virtual connections are used to satisfy specific business requirements. Data is transmitted between two locations using a simple Ethernet WAN solution.

Business locations connect their LANs using router, bridge, or switch edge equipment to a User-Network Interface (UNI) on Zayo provided network terminating equipment using standard Ethernet interfaces. Ethernet Virtual Connections (EVCs) are



# E-Line Service Overview-continued

used to transmit and receive Ethernet packets among connected sites.

#### Point-to-Point E-Line Service

This is a private point-to-point network service delivered over an Ethernet platform. Unlike traditional leased circuits to connect two locations, E-Line delivers Ethernet packets over a more economic and efficient infrastructure and offers granularity of bandwidth to satisfy current data needs.

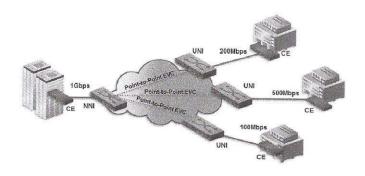


With E-Line, a point-to-point EVC connects the two endpoints acting as a transport enabling the secure transfer of Ethernet service frames between them.

Bandwidth upgrades can be carried out easily to existing service. Because no physical work is required for an upgrade on the same Ethernet interface, lead-times for upgrades are shortened.

#### Point-to-Multipoint E-Line Service

Provides a hub-and-spoke configuration where multiple point-to-point connections are homed to a single hub or aggregation point. A one-to-many configuration option can interconnect multiple sites with far less complexity than meshed or huband-spoke connections implemented with other point-to-point networking technologies such as Frame Relay or ATM and IP-VPN services. Zayo offers the ability to select the bandwidth needed for each location.



Point-to-point EVCs are used to logically connect each remote location to the home office. E-Line is a Layer-2 service so you have full control over your IP routing designs and are not required to change IP addresses.

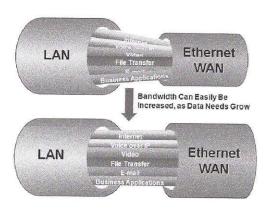
#### Bandwidth

E-Line combines high bandwidth with low cost, simple installation and maintenance to provide application scalability, and enables a network that can accommodate emerging technologies. Funneling LAN traffic through lower bandwidth becomes a juggling act, and is difficult to manage performance, but Zayo offers scalable bandwidth to meet needs of today with the ability to quickly



# E-Line Service Overview-continued

and easily scale to larger bandwidth as business needs grow.



#### Standard Bandwidth Options:

Speed

FastE:

100Mbps

GigE:

100, 200, 300, 400, 500, 1000Mbps

10GigE:

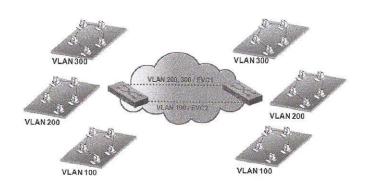
1, 2, 3, 4, 5, 10Gbps

## Class of Service / Quality of Service

E-Line services provide full-duplex communication between sites. By default, traffic is not prioritized and is sent as best effort using first-in, first-out queuing using the entire available bandwidth. A Class of Service can be applied to prioritize traffic and to restrict bandwidth usage. 802.1p priority bits within the customer's 802.1Q VLAN tags are used to establish data prioritization.

#### Layer-2 VPN Managed Service

E-Line services allow untagged frames in addition to VLAN tagged frames to be sent. Customer VLANs are preserved and customers are free to assign any VLAN IDs and VLAN CoS values they want to meet their needs.



Overlapping VLAN IDs can be used across the network between sites providing a Layer-2 VPN using Zayo's VLAN Stacking (or Q-in-Q) capability. One or more VLANs may be bundled and mapped to an EVC at the UNI to be transported transparently across the network.



# Ethernet E-Line Service Overview-continued

#### Service Reliability

Zayo is dedicated to providing outstanding network performance and support. Ethernet services are delivered over highly reliable fiber circuits end-to-end using only fault-tolerant carrier-class network equipment. Service reliability may be further enhanced through route protection options.

Around the clock network monitoring is performed to detect circuit faults and proactive measures are taken to restore upon notification. A comprehensive database of all relevant information associated with the Zayo fiber routes and equipment is maintained to ensure prompt identification and appropriate response to routine and corrective maintenance situations.

Cable and conduit maintenance and repair is performed on a twenty-four (24) hour per day, seven (7) days per week basis. Zayo's qualified personnel, office services, vehicles, and all tools and materials required support the safe and proper performance of network monitoring, maintenance procedures and emergency restoration.



#### SERVICE DETAILS

- Point-to-point, point-to-multipoint configurations
- Connect LANs within and across metros
- Support multiple services from one interface VoIP, Video, Data
- SLAs supported by geographically diverse NOCs
- Fully managed with low Total Cost of Ownership

#### CONNECTIVITY

- Thousands of route miles of metro and intercity fiber on national network
- Thousands of on-net buildings, including Colo Hotels, Data Centers and POPs
- Continual expansion to bring more buildings on-net
- Standard fiber or copper demarcation handoff

#### **APPLICATIONS**

Zayo's E-Line Ethernet Service is suitable for all businesses including Finance, Healthcare, Education, Government, IT, Retail, Real Estate, Legal, Media, etc.

Support applications such as:

Site-to-site access
Server consolidation
Business continuity/disaster recovery
Enterprise-class cloud-based applications
Internet access
Distributed imaging
Distributed storage area networks
Voice over IP
Streamed/interactive video
Layer 2 VPNs for IT Infrastructure
Virtualization

07-09-2014



## **Question II.A.11 Part 2**



To the best of Zayo's knowledge, Zayo terms and conditions are competitive with ILEC offerings. However, Zayo does not offer its services via a Tariff-based Prior Purchase-Based Commitment. In its normal course of business, Zayo does not track its services offered via non-rate benefit as compared to ILEC offerings.



Zayo's policy is to have these terms as part of the service schedule in the customer contract on a per customer basis, which is in writing and is not publically available.

